QUALITY ASSURANCE REPORT/QUALITY CONTROL REPORT

		AEE/QA/PR/11 /2023-24, DATE: 04/01/2024
Name of Work	:	Construction of Roads and Drains in Janatha Colony in ward no 17 Estimated cost 75.00 Lakhs
Job Code	:	017-23-000003
Bill No.& Amount	:	**1st& Final Bill.Rs. 66,51,125.20(Including GST)**
Name of Agency	:	**Sri. Shankarappa**
Type of Test Performed	:	Rebound Hammer test as per IS13311-(2)-1992, IS IS 516 (Part 5/Sec 1) : 2018 for Ultrasonic Pulse Velocity
Materials on which Tests Was Performed	:	1.CC Road (M30) 2.Precast Cover Slab (M20)
Officers present during inspection	:	1. Sri Krishna Murthy AEE-Shettyhalli Sub Division 2. Sri .D Sundaraiah AEE-Quality Assurance
Third Party Consultants	:	M/s Civil Aim Consultants & Engineers
Observations	:	➢ NDT (Rebound hammer test), Ultrasonic Pulse Velocity Test was conducted by Third Party Consultants representative at random locations in presence of AEE (Shettyhalli Sub Division) along with AEE QA division. ➢ The Rebound Hammer Test & Ultrasonic Pulse Velocity Test was conducted randomly on CC Road (M30), Precast Cover Slab (M20). The readings and results are recorded by the Third Party Consultants. ➢ The readings of Rebound Hammer Test, Ultrasonic Pulse Velocity Test results are tabulated and analysis of test results done by Third Party Consultants is here by furnished. ➢ The location wise test results are reproduced in the tables shown below.
Test Locations	:	Location 1: Janatha Colony 5th Cross (ward No 12) House No 189/1 Location 2: Janatha Colony1st Cross Door No 49 Near Electrical Pole

04/1/2024
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Table-01: Rebound Hammer Test Results

Sl. No.	Member	Rebound Hammer Number	Average reading	Compressive Strength (N/mm2)	Impact Direction
Location 1: Janatha Colony 5th Cross (ward No 12) House No 189/1					
1	CC Road (M30)	34	32	32-34	Vertical Down
2		30			
3		32			
4		30			
5		34			
6		30			
1	Precast Cover Slab (M20)	25	25	20-22	Vertical Down
2		25			
3		27			
4		25			
5		26			
6		24			

Table-02: Rebound Hammer Test Results

Sl. No.	Member	Rebound Hammer Number	Average reading	Compressive Strength (N/mm2)	Impact Direction
Location 2: Janatha Colony1st Cross Door No 49 Near Electrical Pole					
1	CC Road (M30)	30	31	30-32	Vertical Down
2		30			
3		32			
4		30			
5		28			
6		34			

Table-03: Ultra Sonic Pulse Velocity Test Result

Sl. No.	Floor level / Structural Member/ Identification	Point of test	Path Length (mm)	Time Taken (µs)	Pulse Velocity (Km/Sec)	Mean Pulse Velocity (Km/Sec)	Concrete Quality Grading	Method of Transmission
Location 1: Janatha Colony 5th Cross (ward No 12) House No 189/1								
1	CC Road (M30)	Random	100	23.1	4.33	4.16	Good	Indirect Method
			200	50.1	3.98			Indirect Method
Location 2: Janatha Colony1st Cross Door No 49 Near Electrical Pole								
1	CC Road (M30)	Random	100	18.4	5.43	4.87	Excellent	Indirect Method
			200	46.5	4.30			Indirect Method

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Table-04: CC Road Core Test Results

Location 1: Janatha Colony 5th Cross (ward No 12) House No 189/1		
SL NO	**Description**	**Trail 1**
1	Height of core (mm)	140.0
2	Dia of Core D (mm)	66.00
3	Core Wt (Kg)	1.115
4	Density of Core (kg / m3)	2327.93
5	H / D	2.12
6	Correction factor (Based on H/D)	1.013
7	'Failure Load (kN)	78.90
8	Core Strength (N/mm2)	23.06
9	'Correction Factor for the Dia. (Strength of the Core x 1.08)	24.91
10	Corrected Cylinder Compressive Strength (N/mm2)	25.23
11	Equivalent Cube Compressive Strength (N/mm2)	31.54

Table-05: CC Road Core Test Results

Location 2: Janatha Colony1st Cross Door No 49 Near Electrical Pole		
SL NO	**Description**	**Trail 1**
1	Height of core (mm)	145.00
2	Dia of Core D (mm)	66.00
3	Core Wt (Kg)	1.165
4	Density of Core (kg / m3)	2348.44
5	H / D	2.20
6	Correction factor (Based on H/D)	1.021
7	'Failure Load (kN)	80.20
8	Core Strength (N/mm2)	23.44
9	'Correction Factor for the Dia. (Strength of the Core x 1.08)	25.32
10	Corrected Cylinder Compressive Strength (N/mm2)	25.86
11	Equivalent Cube Compressive Strength (N/mm2)	32.32

Conclusion:

The file containing **1st & Final bill** has been submitted for the above work to QA department on 01.12.2023 requesting for spot inspection. Engineers of QA/QC division have visited the work spot on 22.12.2023

Third Party Consultants team was instructed to assess the strength of concrete used CC Road (M30), Precast Cover Slab (M20) by Rebound Hammer Test & Ultrasonic Pulse Velocity Test. The Rebound hammer test and Ultrasonic Pulse Velocity Test were conducted by Third Party Consultants in presence of engineer in charge of work.

From the test results furnished by Third Party Consultants, it is concluded that the results of the samplescollected are in accordance with the standards/ specifications mention in the IRC codes. However, the results submitted by the Third Party Consultants have been reproduced here with for further needful action. The results checked by QA/QC relates only for item tested in the particular location randomly.

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ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

Engineer in charge of work shall ensure that work executed as per this bill is not claimed in any other bill /work or else Engineer in charge of work shall be held responsible.

Further, QA/QC directs the Engineer in-charge of the work that all materials used for the work shall be inspected, tested and accepted as per the relevant specifications before incorporation in the work. The frequencies and methods of sampling and testing materials, including those required for definite purpose and not covered by MORT&H specifications shall be in accordance to the relevant IRC or BIS or AASHTO/ASTM/BS standards in order of priority.

All materials or work not conforming to the requirements of the specifications shall be considered unacceptable and rejected. The unacceptable materials or works that are rejected shall be immediately removed unless the defects are corrected and approved by the engineer in-charge of work.

The concerned Engineer in charge of the work shall follow the direction issued by Chief Commissioner Letter number dated 01.08.2022 and 14.09.2022 and take necessary action as appropriate in accordance with the law.

Note: -

This report by QA/QC is pertaining to the work carried out in **1st & Final bill** only.

Therefore, further QA/QC reports shall be obtained for the items of work carried out in future Running Account bill / Final bill.

Engineer in charge of work shall display details of work, work code, cost of project, start and completion date, and information of Engineer in charge of work with contact numbers at work spot.

Engineer in charge of work and Agency shall ensure that if any damages or defects occur pertaining to the executed work within the Defect Liability period (DLP), The same shall be rectified immediately on top priority without fail.

Engineer in charge of work shall ensure that any changes/ modification/change in location in the sanctioned estimate to be got approved by competent authority.

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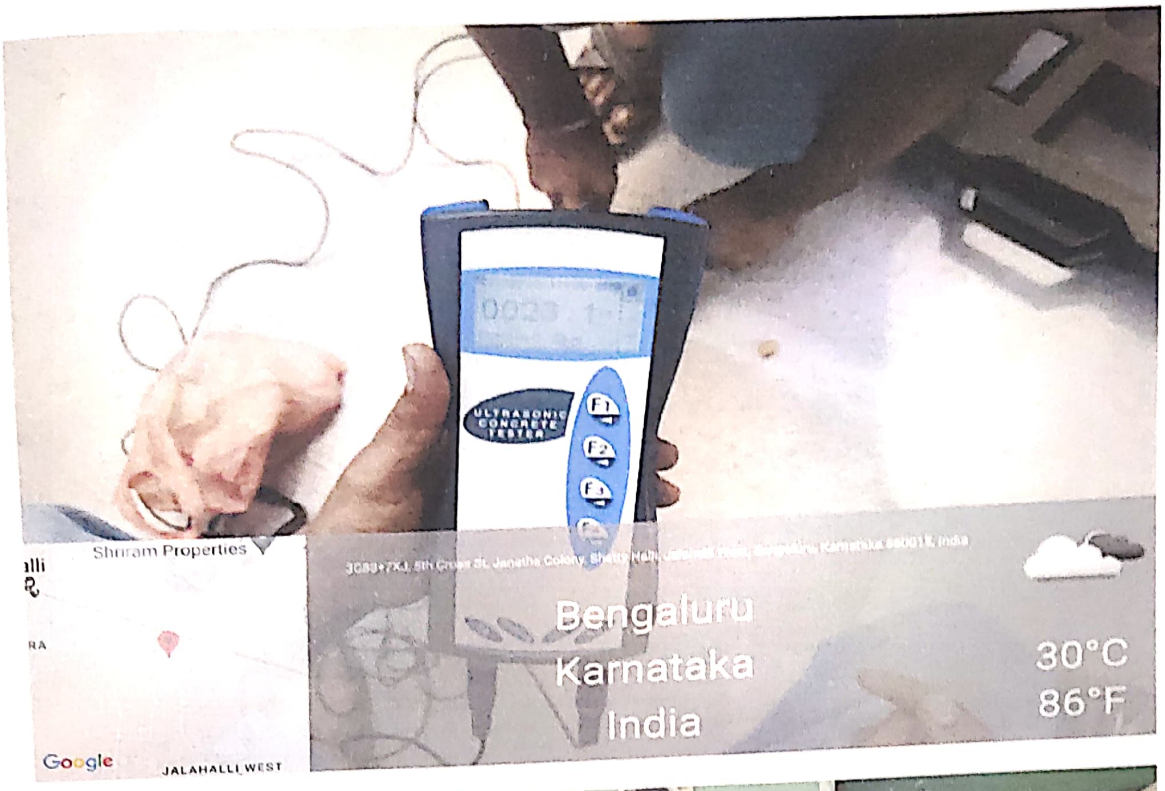

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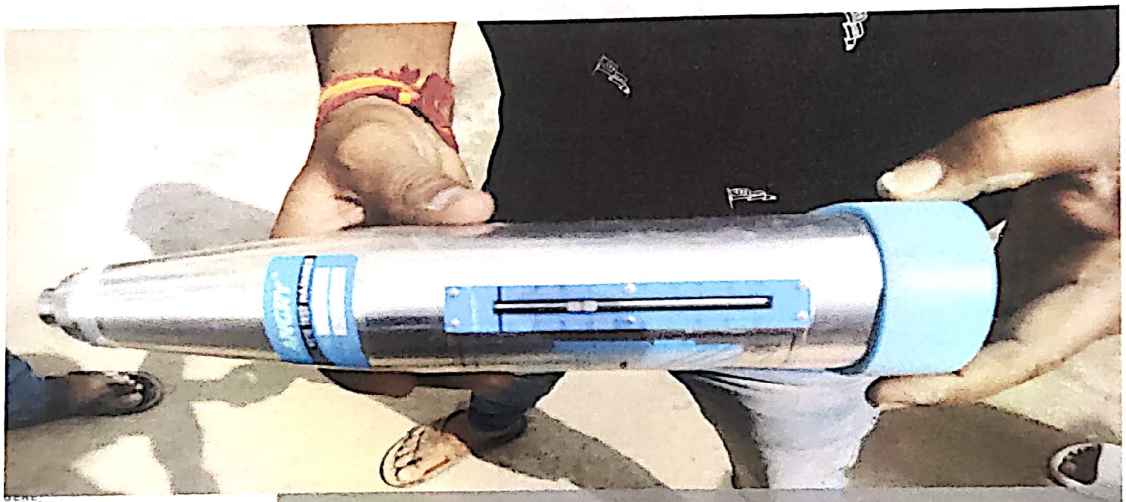

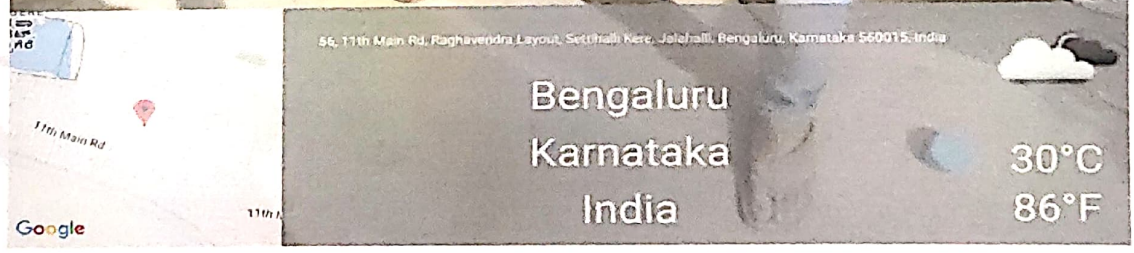

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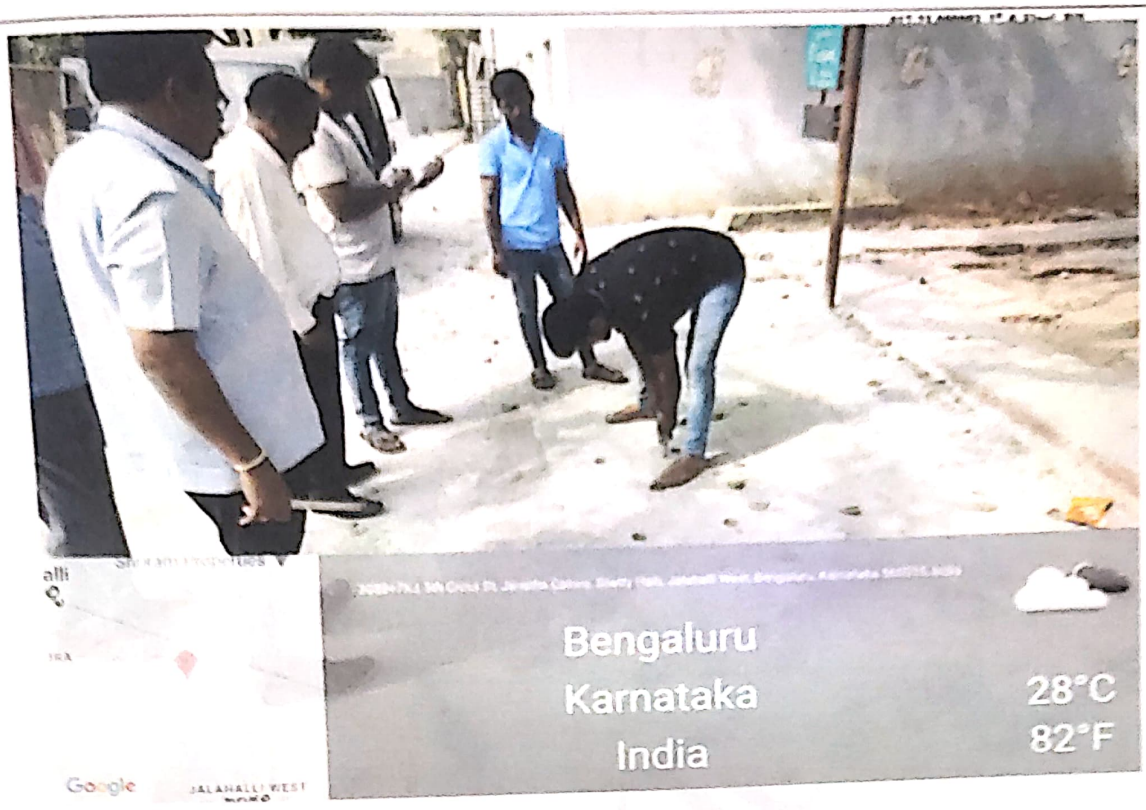

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017-23-00